Engineering Division
W/OSO321:BGM

Additional Information to Modification Note 13 dated June 9, 1994

General

Errata sheet number 1 provides instructions to correct EHB-11, section 3.6, pages 1, A-4, and A-5 of modification note 13. The reason for the change is to provide additional information after modification note 13 was published.

Effects on Other Instructions

Pages 1, A-4 and A-5 of modification note 13, Volume 2, EHB-11, Section 3.6.

Procedure:

1. Add the following information to Special Tools Required on page 1.

ADD: Pen-and-ink change.
TE305-1 may not be included in the visibility calibration kit TE305. The jumper TE305-1 can be ordered directly from NLSC.

2. Remove and replace pages A-3, A-4 and A-5 with the updated pages provided with this errata sheet.

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W/OSO321:BGMcCormick:rhz:1/19/95:"errat13.H11", disk HB 11-F
spellchecked:attch.updated 1/24/95:1/27/95:sol

Table 1. (continued)

12. Coordinate with site observer, if applicable, and clear any maintenance flags generated, making an entry in the SYSLOG.

13. Return signed front page of FMK, along with version 034 EPROM, to NRC.

VISIBILITY SENSOR HEATER CALIBRATION PROCEDURE

1. INTRODUCTION

Use this procedure when installing firmware containing changes to solve the heater diagnostic problem. The new firmware contains a command "V3"which instructs the operator to "calibrate the heater current readings."The "V3', command tells the operator exactly how to enable the firmware to measure the actual current drawn by each of the heaters. There are no special fixtures needed to perform "V3", and it does not matter if the sensor is in "ASOS mode" or not.

Calibration procedures 4 and 5 must be run any time the visibility crossarm, transmit canister, receiver canister, or day/night sensor are replaced.

2. TOOLS AND EQUIPMENT

PC with Procomm Plus or equivalent software
RS232 adapter cables
Digital Multimeter (DMM)
Jumper for the contacts of J7 connector on backplane
Small flat-tipped screwdriver

3. SETUP PROCEDURE

3.1 At the DCP, locate the circuit breaker for the visibility sensor and switch to the OFF position.

3.2 At the visibility sensor, remove hinge pin and lower sensor.

3.3 Open the electronics enclosure. Locate U2 on the processor board and remove the microcircuit using standard ESD precautions. See figure 2.

3.4 Install the new microcircuit supplied into U2 socket, assuring that pin 1 of the microcircuit matches pin 1 of the socket.

3.5 Disconnect the DB-9 cable connector from the fiber optic modem on top of the Faraday box.

3.6 Connect the PC to the DB-9 cable connector in the electronics enclosure. Set the PC to "2400, N, 8, 1" with CAPS LOCK to establish the correct communications protocol with the sensor.

3.7 At the DCP, turn the visibility sensor circuit breaker to ON.

Table 1 (continued)

3.8 Verify that the PC displays the sensor initialization message shown below.

*** VIS VER XXX - 6220 ***

The "XXX" refers to the sensor firmware version number and the "6220" refers to the sensor model number.

3.9 At the PC, type "VG". The sensor will enter the V mode (Extended Diagnostics) and respond with:

VPXXXXXXXXPPPP PPPOPP PPP PPPP XXXX XX

The sensor status bytes reported above should be all "P" for pass with the exception of byte 22, which should be "O" or "I". A "I" indicates the "Heater Diagnostics" for the hood and electronics heaters are being used, a "O" indicates they are not. If any of the "PI's are reported as "F"s, refer to the ASOS Site Maintenance Manual troubleshooting procedures before proceeding. The values marked with "X" are irrelevant to this procedure and should be ignored.

4. HEATER POWER SUPPLY CHECK

4.1 Disconnect the hood/electronics heater thermostat from backplane connector J7.

4.2 Jumper the contacts on the J7 backplane connector together using the jumper assembly (TE305-1) of supplied with the visibility calibration kit. This will enable the hood/electronics heaters.

4.3 Unlatch two fasteners and carefully remove transmitter assembly cap from the back of transmitter assembly.

4.4 Using small flat-tipped screwdriver, slide locking mechanism (plate at front of connector) downward to unlock DB-9 connector. DO **NOT** disconnect the DB-9 connector at this time. See attached drawing of canister end view for connector location, Figure 4.

4.5 Repeat steps 4.3 and 4.4 for the receiver assembly.

4.6 Set the DMM for DC volts and connect the (-) lead to the heater power supply capacitor C2 negative terminal. Connect the (+) lead to the C2 positive terminal. See attached drawing of power supply, Figure 3.

4.7 Wait 5 minutes for heater current to stabilize. At the heater power supply regulator board, adjust R4 for 24.00 + 0.25 -0.00 VDC as read on the DMM. See attached drawing of power supply, Figure 3.

5. HEATER CALIBRATION

5.1 Disconnect the DMM and remove jumper from J7.

5.2 At the PC, type "V3". The sensor will enter the "Heater Calibration" mode. Follow the instructions displayed on the PC screen. The "Heater Calibration" mode can be aborted at any time by striking the <ESC> key. See attached drawing of canister end view for connector location, Figure 4.

Table 1 (continued)

6. TEAR DOWN

6.1 At the PC, type "VG". Byte 20 of the sensor response will be "F". Type" VG" again. The sensor should respond as outlined in step 3.9.

6.1A At the PC type VF. Enter password EIEIO. Press enter until serial number requested. Enter sensor serial number. Press enter until the VF command is completed. Press CNTRL> A

6.2 At the DCP, turn the visibility sensor circuit breaker to OFF.

6.3 At the receiver assembly DB-9 connector, using a small flat-tipped screwdriver, press up on locking mechanism to lock DB-9 connector.

6.4 Repeat step 6.3 for the transmitter assembly.

6.5 Install transmitter assembly cap and latch two fasteners.

6.6 Install receiver assembly cap and latch two fasteners.

6.7 Disconnect the PC DB-9 cable connector from the fiber optic modem and install the DB-9 cable connector removed in step 3.5.

6.8 Close the electronics enclosure door and secure.

6.9 Raise visibility sensor and install hinge pin.

6.10 At the DCP, turn the visibility sensor circuit breaker to ON.